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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,549	01/30/2002	Eric Gregory Oettinger	TI-33551	1761

23494 7590 04/17/2007
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EXAMINER	
KIM, DAVID S	
ART UNIT	**PAPER NUMBER**
2613	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/060,549	OETTINGER ET AL.	
	Examiner	Art Unit	
	David S. Kim	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21 and 23-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21 and 23-31* is/are allowed.

6)☒ Claim(s) *32-34* is/are rejected.

7)☒ Claim(s) *35 and 36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Applicant's response to the objection to **claim 28** in the previous Office Action (mailed on 26 July 2006) is noted and appreciated. Applicant responded by amending the claim. Applicant's amendment overcomes the previous objection, which is presently withdrawn.

2. **Claims 23-24 and 26-27** are objected to because of the following informalities:

Claims 23-24 and 26-27 all refer to cancelled claim 22 where references to claim 21 may be intended.

Appropriate correction is required.

Allowable Subject Matter

3. The indicated allowability of **claims 32-34** is withdrawn in view of the new application of Cheng et al. (U.S. Patent No. 6,577,421 B1, hereinafter "Cheng"), Chan et al. (U.S. Patent No. 6,504,634 B1, hereinafter "Chan"), and any of Degura (U.S. Patent No. 5,684,614, hereinafter "Degura614"), Degura (U.S. Patent No. 6,178,024 B1, hereinafter "Degura024"), and Poon et al. (U.S. Patent No. 6,522,440 B1, hereinafter "Poon"). Rejections based on the newly cited reference(s) follow.

4. **Claims 21 and 23-31** are allowed.

5. **Claims 35-36** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Cheng et al.

7. **Claims 32-34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng.

Regarding claim 32, Cheng discloses a method comprising:

at a first optical wireless unit:

moving a light beam in a first prespecified pattern (col. 5, l. 58-60, scanning routine);

receiving detector range data from the second optical wireless unit (col. 9, l. 42-67 discuss pairings of received intensity at the detector with particular alignment locations, which would provide a profile of the detector range; this range data is received at transmitting terminal 40, col. 9, l. 61-67); and

moving the light beam in a second prespecified pattern (e.g., col. 6, l. 4-6, the scanning routine is repeated; e.g., calibration in col. 10, l. 1-17):

at a second wireless unit:

determining detector range (col. 9, l. 42-67 discuss pairings of received intensity at the detector with particular alignment locations, which would provide a profile of the detector range);

transmitting the detector range (this range data is transmitted to transmitting terminal 40, col. 9, l. 61-67);

determining reference positions (e.g., grid of Fig. 5 employed for the second unit's own transmitter; e.g., calibration positions in col. 10, l. 1-17).

Cheng does not expressly disclose:

at the second wireless unit:

generating a table of detector readings and

wherein the method further comprises

selecting a position from the table based on a optical detector reading; and

transmitting the position to the first optical wireless unit after generating the table of optical detector readings.

However, notice that Cheng teaches a plurality of detector readings (an intensity measurement for each of a plurality of offset position tags in col. 9, l. 48-67). The detector readings are received by a processor or some other component that pairs each detector reading with its respective offset position tag

(col. 9, l. 59-61). Such processing of information/data highly suggests the storage of this information/data in some kind of memory. Moreover, one generally stores a set of information in a table format. Accordingly, "generating a table of detector readings" would be an obvious limitation to include in Cheng.

Furthermore, these pairings of offset-intensity information/data are transmitted to the first optical wireless unit (col. 9, l. 61-64). In view of the obvious table limitation above, it would be obvious to include "selecting a position from the table (e.g., offset information/data) based on an optical detector reading (e.g., intensity measurement)". One of ordinary skill in the art would have been motivated to do this to transmit at least the pairing with the greatest intensity to the first optical wireless unit. That is, the offset position associated with the greatest intensity would correspond to the position with the strongest received signal. One of ordinary skill in the art would definitely be motivated to transmit at least this information to the first optical wireless unit so that the first optical wireless unit would know where to transmit its signal for strong signal reception. Additionally, this transmission and selecting of position information would obviously take place after the table of detector readings has been generated. Otherwise, one would not be able to select anything from the table if it did not previously exist.

Regarding claim 33, Cheng discloses:

The method of claim 32, wherein the selecting step comprising:

polling the optical detectors for an optical detector reading (polling is a standard way to gather information from any component that collects information, including optical detectors);

generating a set of table indices (one generally employs some kind of index to refer to elements in a table, so such a set of indices must be generated); and

selecting a position using the set of table indices (one generally employs some kind of index to refer to elements in a table).

8. **Claim 34** is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng as applied to the claims above, and further in view of Chan and any of Degura614, Degura024, and Poon.

Regarding claim 34, Cheng does not expressly disclose:

The method of claim 33, wherein the optical detector reading is determined from data provided by the plurality of optical detectors and is expressed as:

$$remote_x = NE + SE - SW - NW$$

$$remote_y = NE - SE - SW + NW$$

where: $remote_x$ and $remote_y$ are the optical detector readings, and NE, SE, SW, and NW are data from the optical detectors.

Rather, Cheng discloses the use of a detection array 58 in Fig. 2 as a spatial detector for determining alignment. However, Chan teaches that another suitable alternative to a detection array (Chan, CCD, e.g., col. 29, l. 6-14) is a quad cell detector (Chan, e.g., col. 29, l. 6-14). Accordingly, an obvious variation of Cheng could employ a quad cell detector for providing spatial detector functionality. In view of a quad cell detector, the optical detector readings and data of claim 34 are obvious. That is, these equations are a common way to collect spatial detection information from quad cell detectors, as shown by any of Degura614 (Figs. 1 and 4), Degura024 (Figs. 2 and 5), and Poon (654 and 656 in Fig. 6).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arimoto (U.S. Patent No. 5,465,170) is cited to show the calculation of a radius (col. 10, l. 36-66) and the usage of this radius (col. 13, l. 21-32; col. 14, l. 8-49). Palmer (U.S. Patent No. 6,285,481 B1) is cited to show the exchange of signal strength information between optical wireless units (e.g., Fig. 1). Arnold et al. (U.S. Patent No. 6,347,001 B1) is cited to show a reduced field of view (Fig. 1). Keller et al. (U.S. Patent No. 6,690,888 B1) is cited to show a smaller radius scan (Fig. 11). Melendez et al. (U.S. Patent No. 6,813,446 B1) is cited to show the use of a feedback communication path for beam targeting between optical wireless units (Fig. 2) and to show the use of a signal strength profile (Fig. 3b). Heminger et al. (U.S. Patent No. 6,915,080 B2) is cited to show the usage (col. 7, l. 64-66) and transmission (col. 16, l. 65-67) of a radius.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER